

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in this application. Added text is indicated by underlining, and deleted text is indicated by ~~striketrough~~. Changes are identified by a vertical bar in the margin.

Claims 1-27. (Canceled)

28. (Withdrawn) An apparatus for use in alignment of projection imaging tools, the apparatus comprising:

a substrate that has alignment attributes that occur in interlocking rows and columns across the substrate; and

a calibration file associated with the substrate that indicates the position of the alignment attributes on the substrate.

29. (Withdrawn) An apparatus as defined in claim 28, wherein the calibration file is recorded onto a computer readable medium.

30. (Currently amended) A method of using a reference wafer comprising: loading the reference wafer, that includes overlay targets, onto an imaging machine;

loading and aligning an overlay reticle onto the imaging machine;

exposing the reference wafer with the overlay reticle;

developing the reference wafer;

measuring the overlay targets;

self-referencing the reference wafer by subtracting offset values, associated
with the wafer, from the measurements; and
calculating errors of the machine.

31. (Original) A method as defined in claim 30, wherein the machine is a stepper projection imaging system.

32. (Original) A method as defined in claim 30, wherein the machine is a scanning projection imaging system.

33. (Original) A method as defined in claim 30, wherein the machine is an electron beam imaging system.

34. (Original) A method as defined in claim 30, wherein the machine is an electron beam direct write system.

35. (Original) A method as defined in claim 30, wherein the machine is a SCAPEL tool.

36. (Original) A method as defined in claim 30, wherein the machine is an extreme ultra-violet imaging tool.

37. (Original) A method as defined in claim 30, wherein the machine is an ion projection imaging tool.

38. (Original) A method as defined in claim 30, wherein the machine is an x-ray imaging system.

39. (Previously presented) A method as defined in claim 30, wherein the subtracting and calculating after performed on a computer.

40. (Previously presented) A method as defined in claim 30, wherein the offset values associated with the reference wafer are stored in a calibration file.

41. (Previously presented) A method as defined in claim 40, wherein the calibration file is stored on a computer readable medium.